CZECHOSLOVAKIA

DOLIHAL, J; TOVAREK, J; POKORNY, J.

Third Internal Medicine Clinic of the Medical Faculty of
J. E. Purkyne University (III. vnitrni klinika lekarske
fakulty University J. E. Pukyne), Brno (for all)

Prague, Vnitrni lekarstvi, No 10, 1963, pp 1010-1013

"The Clinical Picture of Acute Intermittent Porphyria."

POJER, J.,prof. M"Dr.; MASTIK, C.; NINGER, E.; DOLIHAL, J. Technicka
    spoluprace: TOVAREK, J.; POKORNY,J.

Hepatic changes in heart infarction. Bratisl. lek. listy 45
no.8:460-468 30 Ap '65.

1. III. vnitrni klinika Lekarske fakulty University J.E. Purkyne
v Brne (veduc. : prof. MUDr. J. Pojer).

Dolin, A.O.

The role of the cerebral cortex in the regulation of metabolic processes. A. O. Dolin, E. T. Minker-Bogdanova and Yu. A. Povorinskii.—Arch. sci. biol. (U. S. S. R.) 36B, 65–77(in English 77)(1934).—The sugar, Cl and fat curves were detd. in the blood of 2 female patients with hysteria under hypnotic suggestion of receiving sugar when water was actually given and vice versa. It is claimed that the suggested idea rather than the substance given detd. the shape of the blood-sugar curves, but the cited figures are contradictory and are not convincing.
W. A. Perlzweig

A 5 6 . 2 E A A   METALLURGICAL LITERATURE CLASSIFICATION

DOLIN A.O.

DOLIN A. O.
_____

Generalisatsiia malovykh refleksov v period ikh spetsialisatsii kak forma proiavleniia sistemnosti korkovykh protsessov. /Close correlation of elements of a complex system and correlation of the entire complex with surrounding conditions/ Tr. Fiziol. laborat. Pavlova 16: 1949 p. 360-81.

1. Of the Physiological Division of the All-Union Institute of Experimental Medicine (Head — Academician I. P. Pavlov). CLML Vol. 19, No. 1 July 1950

DOLIN, A.O.

[Summation of internal inhibition and its role in the modification
of unconditioned alimentary, and defense reflexes] Summatsiia vnut-
rennego tormozheniia i ee rol' v izmenenii bezuslovnykh pishchevykh
i oboronitel'nykh refleksakh. Tr.Fiziol.laborat.Pavlova 16:382-397
'49.   (CLML 19:1)

1. Of the Physiological Department imeni Academician I.P.Pavlov of the
All-Union Institute of Experimental Medicine and the Department of the
Physiology and Pathology of Higher Nervous Activity imeni Academician
I.P.Pavlov of the State Institute for the Advanced Training of Physi-
cians.

DOLIN, A.O.

Conditioned reflex cataleptic condition. Zh. vysshel nerv. deiat.
Pavlova 1 no.4:485-499 July-Aug 1951.   (CLML 23:2)

1. Laboratory of Experimental Neuropathology of the Physiology Department
imeni Academician I. P. Pavlov of the All-Union Institute of Experimental
Medicine and Department of the Physiology and Pathology of Higher Nervous
Activity imeni Academician I. P. Pavlov, State Institute for the Ad-
vanced Training of Physicians.

DOLIN, A.O.

Pathological and protective role of conditioned and unconditioned re-
actions. Zh. vysshei nerv. deiat. 1 no. 6:934-943 Nov-Dec. 1951.
(CLML 23:3)

1. Moscow.

DOLIN, A. O.

DOLIN, A. O. -- "Conditioned-Reflex Emergence and Suppression of Pathological Conditions in an Organism." Sub 22 Apr 52, Central Inst for the Advanced Training of Physicians. (Dissertation for the Degree of Doctorate in Medical Sciences) .

SO: Vechernaya Moskva January-December 1952

DOLIN, A.O.;ZBOROVSKAYA, I. I.

Further study on the process of inhibition (induction inhibition) in repression of pathologic conditions. Zh. vysshei nerv. deiat. 2 no. 1:70-77 Jan-Feb 1952. (CIML 23:3)

DOLIN, A. O.

USSR/Medicine - Immunology

Jul/Aug 52

"Role of the Cortex in Immune Reactions of the Organism," A. O. Dolin, V. N. Krylov, Mil Med Acad iment S. M. Kirov and Chair of Physiol and Pathol of Higher Nervous Activity, Cen Inst for Advanced Tng of Physicians

"Zhur Vyssh Nerv Deyat" Vol 2, No 4, pp 547-560

Results of expts, particularly when dynamic stereotypes are established, offer sufficient ground to think that in immune reactions, as in defensive reactions of an organism, cortical dependence is extremely

234T44

Intensive and firm: Exptl data obtained by inducing immunological and toxic reactions with the aid of conditional irritants furnishes the basis for confirmation that the cortical component is necessarily a part of the over-all phenomena which form the immunological reaction, strengthening or weakening it depending on intercentral relationships that are formed. All this attests to the significance and performed defensive, protective role of the nervous system and the particularly great part that the cortex plays in that activity.

234T44

DO:.IN, A.O.

50 years of the theory on conditioned reflexes. Sovet. zdravookhr.
11 no.2:3-9 Mar-Apr 1952.
(CLML 22:1)

1. Professor. 2. Moscow.

LEPESHINSKAYA, O.B., professor; USIEVICH, M.A., professor; ASRATYAN, E.A., professor; SMIRNOV, A.I., professor; FILIPPOVICH, S.I., doktor meditsin-skikh nauk; VOLOKHOV, A.A., professor; FILIMONOV, I.N., professor; SNYAKIN, P.G., professor; CHERNIGOVSKIY, V.N., professor; SPERANSKIY, A.D., akademik; DOLIN, A.O., doktor meditsinskikh nauk; KOTLYAREVSKIY, L.I., professor; NEGOVSKIY, V.A., professor; KASATKIN, N.I., professor; STEL'CHUK, I.V., professor; YEGOROV, B.G., professor; BAKULEV, A.N., professor; SMIRNOV, L.I., professor; USPENSKIY, V.N., redaktor; PETROV, S.P., redaktor.

[Teachings of I.P.Pavlov in theoretical and practical medicine]
Uchenie I.P.Pavlova v teoreticheskoi i prakticheskoi meditsine. Vol.2.
Moskva, Izd-vo Ministerstvo zdravookhraneniia SSSR, 1953. 611 p.
(MLRA 7:3)

1. Deystvitel'nyy chlen AMN SSSR (for Lepeshinskaya, Chernigovskiy and Bakulev). 2. Chlen-korrespondent Akademii nauk SSSR (for Asratyan). 3. Chlen-korrespondent AMN SSSR (for Smirnov, Filimonov, Yegorov and L.I.Smirnov). 4. Moscow. TSentral'nyy institut usovershenstvovaniya vrachey. (Pavlov, Ivan Petrovich, 1849-1936) (Nervous system) (Physiology)

DOLIN, A.O.

Chem Obs V 4f

1-25-54

Pathology

(6)

Characterization test of epileptiform state phases by means of the transhemation reaction. L. A. Blyumenfel'd, A. O. Dolin, B. E. Krasovitskaya, T. P. Rolich, and A. M. Charnyi (Ministry Health, Moscow). *Doklady Akad. Nauk S.S.S.R.* 92, 189-91(1953).—The rate of the transhemation reaction reflects the phases of the epileptic state. Preconvulsion state reduces the rate of transhemation, a change that becomes evident immediately upon introduction of camphor. The retardation is then replaced with a constantly increasing rate of transhemation. If the convulsions are feeble, the latter phase is not apparent. The postconvulsive state is characterized by gradual retardation of transhemation. The expts. were run on rabbits, and the transhemation reaction was run as described earlier (*C.A.* 46, 7637f).   G. M. Kosolapoff

DOLIN, A.O.; SALGANNIK, G.M. [deceased]

Physiological principles of psychoprophylactic preparation for
labor. Akush. i gin. 32 no.3:47-62 My-Je '56.   (MIRA 9:9)

1. Iz Instituta kusherstva i ginekologii (dir. L.G.Stepanov)
Ministerstva zdravookhraneniya SSSR
        (LABOR,
            painless, psychoprophylactic method, physiol. aspects
                                                (Russ)

DOLIN, A.O., (Moskva)

Experimental pathology of the higher nervous activity. Zhur.vys.
nerv.deiat. 7 no.6:819-830 N-D '57.   (MIRA 11:2)
        (CENTRAL NERVOUS SYSTEM, physiology,
            higher nervous activity, exper. disord., review (Rus))

ANOKHIN, P.K., BABSKIY, Ye.B., VERESHCHAGIN, N.K., KABANOV, A.N., PUCHKOV, N.V.
DOLIN, A.O.

Nikolai Vladimirovich Timofeev; an obituary. Fiziol.zhur. 44
no.9:904-905 S '58   (MIRA 11:12)
          (TIMOFEEV, NIKOLAI VLADIMIROVICH, 1896-1958)

DOLIN, A.O.,(Moskva)

Nature of the double role of inhibition as compared with
roactions of the organism to chemical epileptogenic stimuli.
Zhur.vys.nerv.deiat. 9 no.3:343-353 My-Je '59. (MIRA 12:9)
                    (REFLEX, CONDITIONED)
                    (CONVULSIONS, experimental)

DOLIN, A.O.; KRYLOV, V.N.; LUK'YANENKO, V.I.; FLEROV, B.A.

Recent experimental data on conditioned reflex production and the inhibition of immune and allergic reactions. Zhur.vys.nerv.deiat. 10 no.6:832-841 N-D '60.   (MIRA 14:1)

1. Kafedra fiziologii vysshey nervnoy deyatel'nosti Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
          (CONDITIONED RESPONSE)   (ALLERGY)   (IMMUNITY)

DOLIN, Aleksandr Osipovich, prof.; KOZAROVITSKII, L.B., red.;
KAPYSHEVA, V.S., red. izd-va; GRIGORCHUK, L.A , tekhn.
red.

[Pathology of the higher nervous activity] Patologiia vys-
shei nervnoi deiatel'nosti. Moskva, Gos.izd-vo "Vysshaia
shkola," 1962. 338 p.   (MIRA 16:8)
                  (BRAIN—DISEASES)

DOLIN, A.O. (Moskva); FARBER, D.A. (Moskva); ZHANOVSKIY, Yu.F. (Moskva)

Determination of the lability of nervous processes based on the reaction of assimilating the rhythm of light flickering. Zhur. vys. nerv. deiat. 15 no.2:381-392 Mr-Ap '65.

(MIRA 18:5)

DOLIN, B.

Hunting with a movie camera. Moskva, Goskinoizdat, 1951.

SHAROV, I., inzh.; DOLIN, I., inzh.

Using plastic materials in building apartment houses. Zhil.-
kom.khoz. 9 no.6:17-18 '59.   (MIRA 12:10)
        (Moscow--Apartment houses) (Plastic materials)

DOLIN, I. I. and BRUSENTSEVA, S. A. (Inst of Physical Chemistry)

"The Action of Ionizing Radiation on Concentrated Water Solutions of Inorganic Substances"

Isotopes and Radiation in Chemistry, Collection of Papers of 2nd All-Union Sci.Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 360pp.

This volume publishes the reports of the Chemistry Section of the 2nd All Sci Tech Conf on Use of Radioactive and Stable Isotopes and Radiation in Science and the National Economy, sponsored by Acad. Sci. USSR and Main Admin for Utilization of Atomic Energy under Council of Ministers USSR, Moscow, 4-12 April 1957.

DOLIN, K.

Study, constructive work, relaxation. Prof.-tekh.obr. 15 no. 7:14
Jl '58.   (MIRA 11:7)
     (Railroads--Employees--Education and training)

9,3700

S/141/61/004/005/015/021
E039/E120

AUTHOR: Dolin, L.S.

TITLE: On the possibility of comparison of three-dimensional
           electromagnetic systems with non-uniform anisotropic
           filling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
           Radiofizika, v.4, no.5, 1961, 964-967

TEXT: Electromagnetic field systems can be investigated,
without a direct solution of Maxwell's equations, by comparison
with other simpler field systems. In this paper the possibility
of comparing analogous three-dimensional systems is examined.
Starting from Maxwell's equations in generalised orthogonal
coordinates, invariant equations are derived relating electric
and magnetic current densities, charge density, permittivity and
permeability. These equations can be applied to a three-
dimensional field system with anisotropic filling. A simple
example is used to illustrate the method; this is a naturally
oscillating resonator with perfectly conducting walls. It is
shown that, by substitution, it is possible to examine the
Card 1/2

On the possibility of comparison of .. S/141/61/004/005/015/021
                                         E039/E120

electromagnetic field components in a second resonator with
different parameters for the filling medium. It should be noted
that as it is not permissible to transform the properties of a
medium independently, because there are well defined relations
between them, this puts some limitation on the method. However,
it is shown that the method is useful for the solution of
electromagnetic field problems.
There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut
             pri Gor'kovskom universitete
             (Scientific Research Institute for Radiophysics at
             Gor'kiy University)
SUBMITTED: March 11, 1961

Card 2/2

DOLIN, L.S.

Scattering of a light beam in a layer of a turbid medium.
Izv. vys. uchob. zav. radiofiz. 7 no.2:380-382 '64   (MIRA 18:1)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri
Gor'kovskom universitete.

DOLIN, L.S.

Description of the radiation from weakly inhomogeneous wave fields.
Izv. vys. ucheb. zav.; radiofiz. 7 no.3:559-562 '64.   (MIRA 17:11)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom
universitete.

L 6712-65   EWA(k)/EWT(1)/EWG(k)/EPA(sp)-2/EEC(k)-2/K/EPL(w)-2/EEC(t)/T/
EEC(b)-2/EWP(k)/EWA(m)-2   Po-4/Pz-6/Tab-24/Pf-4/P1-4/P1-4   IJP(c)/ASD(s)-5/
ESD(gs)/ESD(t)/RAEM(t)   W/JBB/AT

ACCESSION NR: AP4044101   S/0141/64/007/003/0471/0478

AUTHOR: Dolin, L. S.

TITLE: Reciprocity relations for partially coherent electromagnetic
fields

SOURCE: IVUZ. Radiofizika, v. 7, no. 3, 1964, 471-478

TOPIC TAGS: correlation analysis, reciprocity relation, Maxwell
equation, electromagnetic diffraction, radiation resistance

ABSTRACT: Reciprocity relations are obtained for the tensor corre-
lation functions for a random stationary electromagnetic field,
first introduced by B. Wolf (Nuovo Cimento v. 12, 884, 1954).   Since
these correlation functions have been shown to satisfy a system of
linear differential equations equivalent to the Maxwell equations,
the author considers it of interest to generalize the reciprocity
principle, formulated originally for the case of regular fields, and

Card   1/3

L 6712-65
ACCESSION NR: AP4044101

to change over to a correlation formulation of the reciprocity prin-
ciple. It is shown that the electrodynamic reciprocity principle
can be formulated in the form of relations not between the fields
and the currents but between the correlation functions directly.
He then proceeds to apply the results to the diffraction of random
fields, using a modification of the method of auxiliary sources,
which is widely used in the theory of radiation and diffraction of
regular fields. As a particular example, the author considers the
diffraction of a statistically homogeneous and isotropic field by
an arbitrary object, where the problem of determining the correla-
tion characteristics reduces to the determination of the mutual
radiation resistance of the body and a set of elementary dipoles.
The case when the diffracted field can be regarded as homogeneous
over the length of the diffracting object is also treated from the
reciprocity point of view. "In conclusion, I thank M. A. Miller
for valuable advice and remarks." Orig. art. has: 24 formulas.

Card 2/3

L 6712-65
ACCESSION NR: AP4044101

ASSOCIATION: Nauchno issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute at the Gor'kiy University)

SUBMITTED: 19Jul163

SUB CODE: EM

NR REF SOV: 003

ENCL: 00

OTHER: 007

Card 3/3

L 15993-66   EEC(k)-2/EWT(d)/EWT(l)/FCC   GW/WH-2/LHB
ACC NR: AP6007631   SOURCE CODE: UR/0141/66/009/001/0061/0071

AUTHOR: Dolin, L. S.

ORG: Scientific Research Radiophysics Institute of Gor'kiy University (Nauchno-
issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Propagation of a narrow light beam in a medium with pronounced aniso-
tropic scattering

SOURCE: IVUZ. Radiofizika, v. 9, no. 1, 1966, 61-71

TOPIC TAGS: light propagation, searchlight sounding, light scattering, atmos-
pheric optics

ABSTRACT: The problem of the propagation of an initially narrow, sharply
directed light beam in a turbid medium with pronounced anisotropic scattering is
examined. Proceeding from the transport equation in the approximation of small
angles, the dependence of the im-axis illumination intensity, the dispersion
of the angle of beam arrival, and the effective beam cross section on the optical
path, initial beam characteristics, and angular width of the indicatrix of
scattering is computed. The computations yield a reasonably complete qualitative
picture of the structure of the beam in the area relatively near the source. The

Card 1/3   UDC: 535.36

L 15993-66
ACC NR: AP6007631

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basic characteristics of the beam with zero initial dispersion is shown diagram-
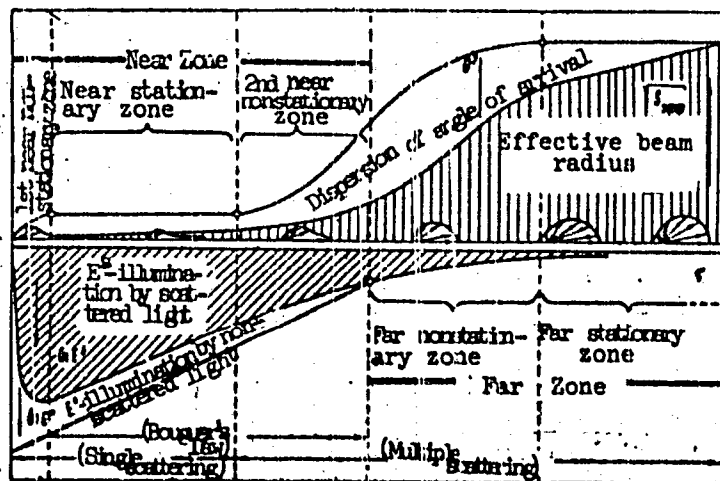matically (see Fig. 1). The upper curve depicts the axial distribution of the

Fig. 1. Beam dis-
persion characteristics

Card 2/3

L 15993-66
ACC NR: AP6007631

angular dispersion of beam arrival (β^2). The upper lined area corresponds to the configuration of the beam, whose limits are set by a definite level of intensity fall-off. The deformation of the brightness body on the beam axis is illustrated by several qualitative diagrams. The lower half of the diagram shows the axial distribution of illuminations E^o and E^s by nonscattered and scattered light respectively. The beam is broken down into the zones indicated on the basis of the illumination intensities created on the beam axis by the nonscattered and scattered fields. The scale of the diagram is arbitrarily chosen. Orig. art. has: 21 formulas and 6 figures.

[DM]

SUB CODE: 04/ SUBM DATE: 03May65/ ORIG REF: 009/ OTH REF: 002/ ATD PRESS:
4203

Card 3/3

AUTHORS: Dolin, N.F., and Zyabkina, Z.F. (Engineers)   SOV/110-59-9-22/22
TITLE: A Scientific-technical Conference on Rectifiers
PERIODICAL: Vestnik elektropromyshlennosti,1959,Nr 9, p 80 (USSR)

ABSTRACT: A scientific-technical conference on rectifiers was held
in Zaporozh'ye. There were more than 300 delegates from
135 organisations representing research institutes, and
various organisations concerned with the development,
manufacture, erection and operation of rectifiers.
Expected developments in rectifier technique during the
period 1959-65 were considered. The need for suitable
rectifiers for many branches of industry was noted, but
the present state of affairs was not considered satis-
factory. New types of rectifiers including high-quality
semiconductor materials are being introduced very slowly.
In recent years research laboratories and factories have
nevertheless achieved appreciable successes. A series
of pumpless rectifiers is manufactured. Special types of
rectifier equipment have been developed for different
applications. Germanium rectifiers have been developed
for currents from 10 to 200 A and voltages from 100 to
200 V. The ionic excitation system of the

Card
1/2

A Scientific-technical Conference on Rectifiers   SOV/11C-59-9-22/22

hydro-alternators at the Volga Power Station is working satisfactorily. Construction has commenced on the first full-scale 800 kV d.c. transmission line from the Stalingrad power station to the Donbas. Sixty reports and communications were read. Serious defects were revealed in the organisation of production and in the development of new types of rectifier. The developments necessary in the period 1959-65 were reviewed and it was recommended that individual factories should specialise. The main directions of technical development in rectifiers were pointed out.
There are no figures, no references.

Card
2/2

USCOMM-DC-61,750

S/110/60/000/010/014/014
E073/E535

AUTHORS: Dolin, N.I. and Zyabkina, Z.F., Engineers

TITLE: Conference on Transformer Construction

TEXT: The conference was held in Zaporozh'ye from April 5-9,
1960. There were over 300 participants. 38 papers and 23
communications were presented. The representative of Gosplan,USSR,
P. P. Chusov presented a paper on the tasks and prospects of
development in the field of transformer design during 1960-1965,
a period during which the production of transformers is to increase
by a factor of 3.3. I. S. Kalinichenko, Elektrotechnicheskiy
nauchno-issledovatel'skiy institut (Electrotechnical Scientific
Research Institute), Zaporozh'ye presented a paper on the present
state and prospects of development in the field of large power
transformers and auto-transformers. Representatives of other
works presented papers on new series and on trends of development
in the transformer field. Doctor of Technical Sciences G. N. Petrov
discussed the prospects of introducing multi-winding auto-
transformers to satisfy the increasing requirements of inter-
connected networks with differing voltages. K.K. Chernev, Glavnyy
Card 1/3

S/110/60/000/010/014/014
E073/E535

Conference on Transformer Construction

energeticheskiy upravleniya (Chief Power Directorate), Gosplan,USSR, presented a paper in which failures of transformers produced in 1950 were analysed. I. D. Yanshina (MTZ) and B. A. Alekseyev (VNIIE) dealt with methods of investigating and monitoring the humidity of insulation. V. S. Panasyuk (MTZ) dealt with methods of drying transformers. B. V. Vanin and N. B. Leonidova (VNIIE) analysed data on the humidity of transformers in operation and on investigation of processes of drying transformer insulation. V. V. Girshberg (VNIIEM) dealt with the present state and the trends of development in manufacturing complete transformer substations. The problem of using aluminium in transformers was dealt with by M. A. Bass (ZTZ). A. N. Kalyakina (VEI) presented a paper on new insulation materials for transformers. Results of testing and investigation of the dynamic strength of aluminium windings of transformers with textured steel cores were presented by I. S. Nayashkov. L. V. Zamyatina and A. V. Sapozhnikov presented results of investigations of internal protection of transformers and auto-transformers from atmospheric over-voltages.

Card 2/3

S/110/60/000/010/014/014
E073/E535

Conference on Transformer Construction

Yu. A. Vasil'chenko (ZTZ) reported on methods of improving the
cooling of transformers. V. I. Nepomnyashchiy, Komitet
standartov, mer i izmeritel'nykh priborov Sovet Ministrov SSSR
(Committee of Standards, Gauges and Metering Instruments, Council
of Ministers, USSR) presented a paper on the tasks and advantages
of standardization in transformer construction.

Card 3/3

DOLIN.   P. A.

Collection of rules in force regarding safety methods.   Moskva, Gos. energ.
izd-vo, 1951.

DOLIN, P. A.

The repair of transformers in municipal electrical systems. Moskva, Izd-vo Ministerstva Kommunal'nogo khoziaistva RSFSR, 1951. 166 p. (51-34472)

TK2551.D56

DOLIN, P. A.

Pravila bezopasnosti na liniiakh elektroperedachi bez sniatiia napriazheniia (s
poiasneniiami) (Safety rules on electric transmission lines without cutting off the
current (with explanations)). M"skva, Gosenergoizdat, 1954. 63 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 6, Sep. 1954

DOLIN, P.A.

Pravila bezopasnosti pri rabotakh na liniiakh elektroperedachi bez sniatiia napriazheniia (s poiasneniiami); posobie dlia personala setevykh raionov (Safety rules for work on electric power lines without interrupting the current (with explanations); manual for power line network personnel). Moskva, Gosenergoizdat, 1955. 63 p.

SO: Monthly List of Russian Accessions, Vol 7, No 9, Dec 1954

DOLIN, P.A.; KHAVIN, M.Z.; SHUTOV, I.G.; SKVORTSOV, I.M., tekhnicheskiy
redaktor.

[Collection of safety engineering rules now in force] Sbornik
deistvuiushchikh pravil po tekhnike bezopasnosti. Izd. 2-3
peresm. i dop. Sostavili P.A. Dolin, M.Z. Khavin, I.G. Shutov.
Moskva, Gos. energ. izd-vo 1955. 696 p.   (MLRA 8:8)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii.
            (Safety engineering)

DOLIN, PETR ALEKSEYEVICH

Spravochnik po tekhnike bezopasnosti Reference book on accident prevention techniques Moskva, Gosenergoizdat, 1958.

303 1 p. illus., diagrs., tables.
Bibliography: p. 302- 304

BEN'YAMINSON, V.Ye., inzh.; DOLIN, P.A., kand. tekhn. nauk; LYASHENKO, V.D., inzh.

New high-power laboratory for testing high-voltage apparatus. Elek. sta. 29 no.2:67-70 F '58. (MIRA 11:3)
(Electric laboratories)

DOLIN, P.A., kand., tekhn. nauk.

Effect of the height of the line on ice load. Elek. sta. 29 no.4:
52-54 Ap '58.   (MIRA 11:8)

(Electric lines—Overhead)

DOLIN, P.A., kand.tekhn.nauk

Performance of a split phase of a 400 kv. line under icing
conditions. Elek.sta. 29 no.8:63-66 Ag '58.   (MIRA 11:11)
    (Electric lines—Cold weather conditions)

DOLIN, Petr Alekseyevich; SOLOV'YEV, Petr Fedorovich, inzh.; SMIRNOV,
A.D., inzh.; obshchiy red.; BRANDENBUROSKAYA, E.Ya., red.;
LARIONOV, G.Ye., tekhn.red.

[Safety engineering] Tekhnika bezopasnosti. Izd.3., perer. i
dop. Moskva, Gos.energ.izd-vo.(Spravochnik elektromontera, no.5)
                                                    (MIRA 13:4)
        (Electric engineering--Safety measures)

HAYFEL'D, Mark Romanovich; DOLIN, P.A., kand.tekhn.nauk, retsenzent; USTINOVA, Yu.P., red.; LARIONOV, G.Ye., tekhn.red.

[Protective grounding of electric systems] Zashchitnye za- zemleniia v elektrotekhnicheskikh ustanovkakh. Izd.2., perer. Moskva, Gos.energ.izd-vo, 1959. 214 p. (MIRA 13:5)
                  (Electric currents--Grounding)
                  (Electric power distribution)

TUMANOV, Boris Vladimirovich; DOLIN, P.A., red.; VORONIN, K.F.,
tekhn.red.

[Safety information for electric welders] Pamiatka po tekhnike
bezopasnosti dlia elektrosvarshchikov. Moskva, Gos.energ.izd-vo,
1960. 19 p.   (MIRA 14:6)
        (Electric welding—Safety measures)

DOLIN, Petr Alekseyevich; BRANDENBURGSKAYA, E.Ya., red.;BORUNOV, N.I.,
tekhn. red.

[Manual on safety engineering] Spravochnik po tekhnike bezo-
pasnosti. Izd. 2., perer. Moskva, Gos. energ. izd-vo, 1960.
367 p.   (Industrial safety)   (MIRA 14:6)

DOLIN, P.A.; KHAVIN, N.Z.; SHUTOV, I.G.; VORONIN, K.P., tekhn. red.

[Collection of safety engineering regulations] Sbornik deistvuiu-
shchikh pravil po tekhnike bezopasnosti. Izd.3., peresm. i dop.
Moskva, Gos.energ.izd-vo. Vol.1. 1961. 751 p.   (MIRA 14:12)
        (Electric power plants—Safety measures)
        (Electric power distribution—Safety measures)

DOLIN, P.A.; KHAVIN, N.Z.; SHUTOV, I.G.; VORONIN, K.P., tekhn.red.

[Collection of regulations in industrial hygiene] Sbornik
deistvuiushchikh pravil po tekhnike bezopasnosti. Izd.3.,
peresm. i dop. Moskva, Gos.energ.izd-vo. Vol.2. 1962. 480 p.
(MIRA 15:5)

(Industrial hygiene—Laws and legislation)

DOLIN, Petr Alekseyevich; MIRONOV, P.M., red.; ORLOVA, V.Ya., red.
izd-va; SHKILOVSKAYA, I.Yu., red.izd-va; ISLENT'YEVA, P.G.,
tekhn. red.

[Technical norms; a handbook] Tekhnicheskie normativy; spra-
vochnik. Pod red. P.M.Mironova. Moskva, Metallurgizdat, 1963.
(MIRA 16:7)

(Industrial safety--Standards)
(Industrial hygiene--Standards)

DOLIN, P.A.; BARG, I.G., inzh., red.; BUL'DYAYEV, N.A., tekhn. red.

[Work on operating overhead electric power transmission lines; clarifications for chapter IV of "Safety Engineering Regula-tions for Operating Overhead Power Transmission Lines with Voltages in Excess of 1,000 volts."]Raboty pod napriazheniem na vozdushnykh liniiakh elektroperedachi; poiasneniia k glave IV "Pravil tekhniki bezopasnosti pri ekspluatatsii vozdush-nykh linii elektroperedachi napriazheniem vyshe 1 000 v." Izd.2., perer. Moskva, Gosenergoizdat, 1962.   109 p.
(MIRA 15:9)

(Electric lines--Overhead)
(Electric power distribution--Safety regulations)

SEMENOV, N.N.; FRUMKIN, A.N.; DOLIN, P.I.

Natal'ia Alekseevna Bakh, 1895-; on her seventieth birthday and forty-fifth anniversary of scientific activity. Zhur. fiz. khim. 39 no.6:1538-1539 Je '65.
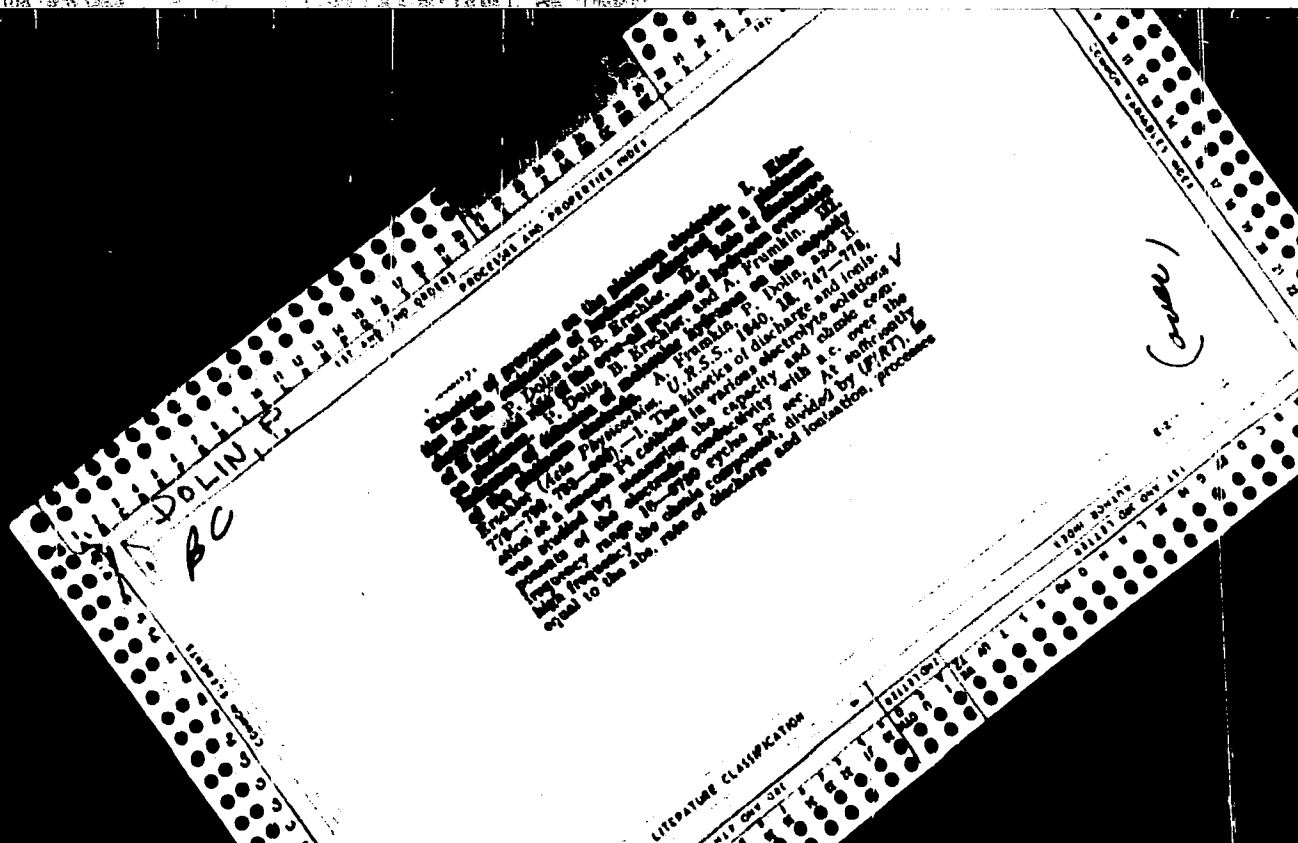
(MIRA 18:11)

DOLIN, P.I.

PROCESSES AND PROPERTIES INDEX

Fractionation of petroleum gases, cracked at high temperatures, with activated carbon. V. I. Shvemberger, P. I. Dolin, H. S. Zolotarev, N. P. Okhapkina and I. I. Nikolaeva. Sintel. Kauchuk 4, No. 4, 17-23(1935). The activated C used in the fractional adsorption of constituents of the cracked gas was of Russian origin (characteristics not given). In a preliminary study of the sepn., the first appearance of the desired components of the fractions after passage through the adsorbers (satn. of C) was detected by means of an interferometer (diagrams are given). The desorption was effected with superheated steam (120°). After establishing the approx. compn. of the cracked gas, it was passed through a series of C adsorbers, one adsorber for each type of gaseous hydrocarbons. Thus it was possible to obtain a divinyl concentrate of 21-22%, a propylene fraction of 61% and an ethylene fraction of about 81%. The C when protected from the action of the higher dienes retains its activity and can be reused for adsorbing the C_2, C_3 and C_4 fractions.
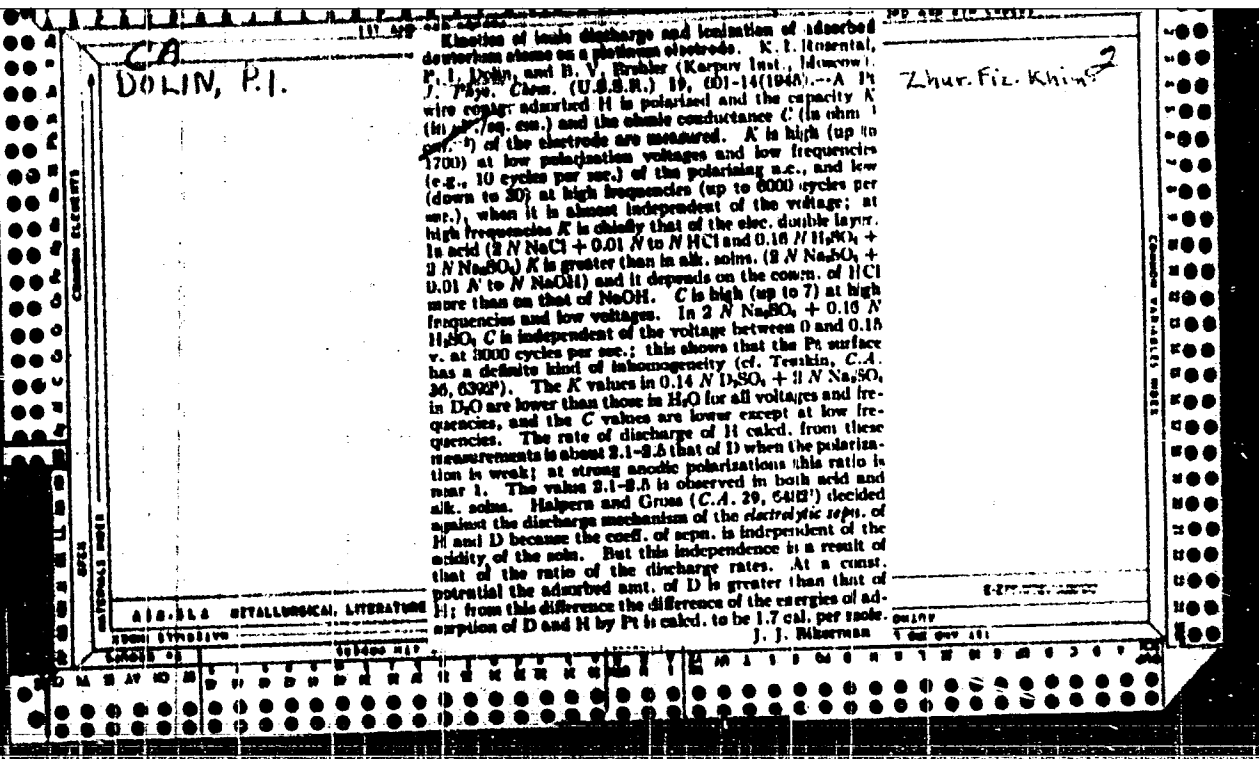A. A. Buehtlinek

METALLURGICAL LITERATURE CLASSIFICATION

DOLIN, P.

βC

Kinetics of processes on the platinum electrode. I. Kinetics of the ionisation of hydrogen adsorbed on a platinum electrode. P. Dolin and B. Ershler. II. Rate of discharge of H ions and rate of the over-all process of hydrogen evolution on platinum. P. Dolin, B. Ershler, and A. Frumkin. III. Influence of adsorption of molecular hydrogen on the capacity of the platinum electrode. A. Frumkin, P. Dolin, and B. Ershler (Acta Physicochim. U.R.S.S., 1940, 12, 747—778, 779—716, 793—806).—I. The kinetics of discharge and ionisation at a smooth Pt cathode in various electrolyte solutions was studied by measuring the capacity and ohmic components of the electrode conductivity with a.c. over the frequency range 10—6780 cycles per sec. At sufficiently high frequency the ohmic component, divided by (F/RT), is equal to the abs. rate of discharge and ionisation, processes

A.S.M.–S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

which are thus shown to occur with finite velocity. It is to
be independent of potential in the region where the electrode
surface is covered to a maximum degree as is accounted for
by assuming that the surface is heterogeneous. The rate of
discharge and recombination increases in the order NaOH < H₂SO₄
< HCl < HBr, which is explained by the influence of sp
adsorption of the ions. The oxidation of H is very slow in
acid and considerably faster in alkaline solutions.

II. By measuring the overvoltage (η) of H on Pt in various
electrolytes over a range of concn. the rate of the discharge
stage is found to be in HCl 27 times and in NaOH 11 times
that of the overall process 21° ± H₂, at the reversible H
potential. It is inferred that η on Pt is determined (a) by the
rate of discharge of H ions on free and covered regions of the
electrode with formation of adsorbed atoms and of H₂ re-
spectively, and (b) by the rate of the inverse reactions. An
equation relating η to the c.d. for a heterogeneous surface and
for small vals. of η is derived.

III. Kruger's equation (cf A, 1943, ii, 705) for the polaris-
ation capacity of a Hg electrode is not directly applicable to
Pt, since it assumed the instantaneous establishment of
equilibrium between H in the solution and H adsorbed on
the surface. Expressions for the variation of the capacity
and of the ohmic component of the conductivity of a Pt
electrode with frequency are derived, allowing for the finite
rate of evolution of H₂.   F. L. U.

CA

DOLIN, P.I.

Zhur. Fiz. Khim.

Kinetics of ionic discharge and ionization of adsorbed deuterium atoms on a platinum electrode. K. I. Rosental, P. I. Dolin, and B. V. Ershler (Karpov Inst., Moscow). J. Phys. Chem. (U.S.S.R.) 19, 601-14 (1945).—A Pt wire coner adsorbed H is polarized and the capacity K (in μf./sq. cm.) and the ohmic conductance C (in ohm⁻¹) of the electrode are measured. K is high (up to 1700) at low polarization voltages and low frequencies (e.g., 10 cycles per sec.) of the polarizing a.c., and low (down to 30) at high frequencies (up to 6000 cycles per sec.), when it is almost independent of the voltage; at high frequencies K is chiefly that of the elec. double layer. In acid (2 N NaCl + 0.01 N to N HCl and 0.16 N H₂SO₄ + 2 N Na₂SO₄) K is greater than in alk. solns. (2 N Na₂SO₄ + 0.01 N to N NaOH) and it depends on the concn. of HCl more than on that of NaOH. C is high (up to 7) at high frequencies and low voltages. In 2 N Na₂SO₄ + 0.16 N H₂SO₄, C is independent of the voltage between 0 and 0.16 v. at 3000 cycles per sec.; this shows that the Pt surface has a definite kind of inhomogeneity (cf. Treskin, C.A. 36, 6392⁹). The K values in 0.14 N D₂SO₄ + 2 N Na₂SO₄ in D₂O are lower than those in H₂O for all voltages and frequencies, and the C values are lower except at low frequencies. The rate of discharge of H calcd. from these measurements is about 2.1-2.5 that of D when the polarization is weak; at strong anodic polarizations this ratio is near 1. The value 2.1-2.5 is observed in both acid and alk. solns. Halpern and Gross (C.A. 29, 6412¹) decided against the discharge mechanism of the electrolytic sepn. of H and D because the coeff. of sepn. is independent of the acidity of the soln. But this independence is a result of that of the ratio of the discharge rates. At a const. potential the adsorbed amt. of D is greater than that of H; from this difference the difference of the energies of adsorption of D and H by Pt is calcd. to be 1.7 cal. per mole.
                              J. J. Bikerman

A13-2L3 METALLURGICAL LITERATURE

DOLIN, P. I.

Kinetics of deuterium ions dischage and ionization of adsorbed deuterium atoms on a platium electrode. K. Rozental, P. Dolin, and B. Ershler (Acta Physicochim. USSR, 1946, 21, 213-234; A., 1941, 1, 338). The capacity and ohmic components of the a.c. conductivity of a Pt. electrode in acid nd alkaline solutions of $2N$ Na_2SO_4 in H_2O and D_2O have been investigated between 10 and 6000 cycles and over a range of overpotential from 0 to 1v. Charging curves of Pt were obtained in the same solutions. At potentials close to those of the corresponding gas electrodes acid solutions, and 1:2.1-2.5 in alkaline solutions. The difference in the discharge rates may be due to a greater adsorption of D that of H on Pt. The difference between the energies of adsorption of D and H on Pt is calc. from the charging curves to be 1.7 kg. -cal. This indicates that the diffe ence in activation energies for discharge of D and H is not great. The capacity and ohmic compinents of the conductivity of a Pt electrode were investigated in aq. $2N$ NaCl in the presence of 0-01-1n-HCL of NaOh. Results agree with th Volmer-Frumkin theory of slow discharge. The variation in the rate of discharge of H and D with potential indicates that the surface of Pt is of a more complex inhomogeneity that was inferred on the basis of charging curves alone (cf. loc. cit.). O.D.S.

Sci. Res. Physico-Chemical Inst. im L. Ya. Karpov

DOLIN, P.I.

Doll. AN SSSR,

Measurement of the polarization capacity of the mercury electrode in a wide frequency range. V. I. Melik-Gaikazyan and P. I. Dolin. *Doklady Akad. Nauk S.S.S.R.* **66**, 409-12(1949). The electrode capacity C was detd. as a function of the potential E with the aid of a perfected app. permitting measurements up to 200,000 hertz without sacrifice of accuracy ($\sim 1\%$), and up to 500,000 hertz with a somewhat lower accuracy. In a pure 1 N KCl soln., C at a given E proved to be independent of the frequency in the whole range, hence, the time necessary for the establishment of the double layer is certainly shorter than 10^{-4} sec. In the same soln. satd. with hexanol, C varies with the frequency. With increasing frequency, the height of the peak bordering on the range of low C and corresponding to adsorption decreases, and disappears altogether at a sufficiently high frequency, the lower the smaller the concn. of the surface-active substance and the greater its adsorbability. This frequency permits estn. of the time necessary for the establishment of the adsorption equil. Higher frequency also results in some lowering of C in the polarization range where C does not vary with E, evidently owing to the slowness of penetration of the ions into the adsorbed hexanol layer on the surface of the Hg. Expts. with AmOH gave analogous results.   N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

DOLIN, P.I.;   LOSEV, V.V.;   LUKOVTSEV, P.D.;   MEDVEDOVSKIY, P.D.

Letter to the editor. Usp. khim.,22 no.6:775-776 Je '53. (MLRA 6:5)
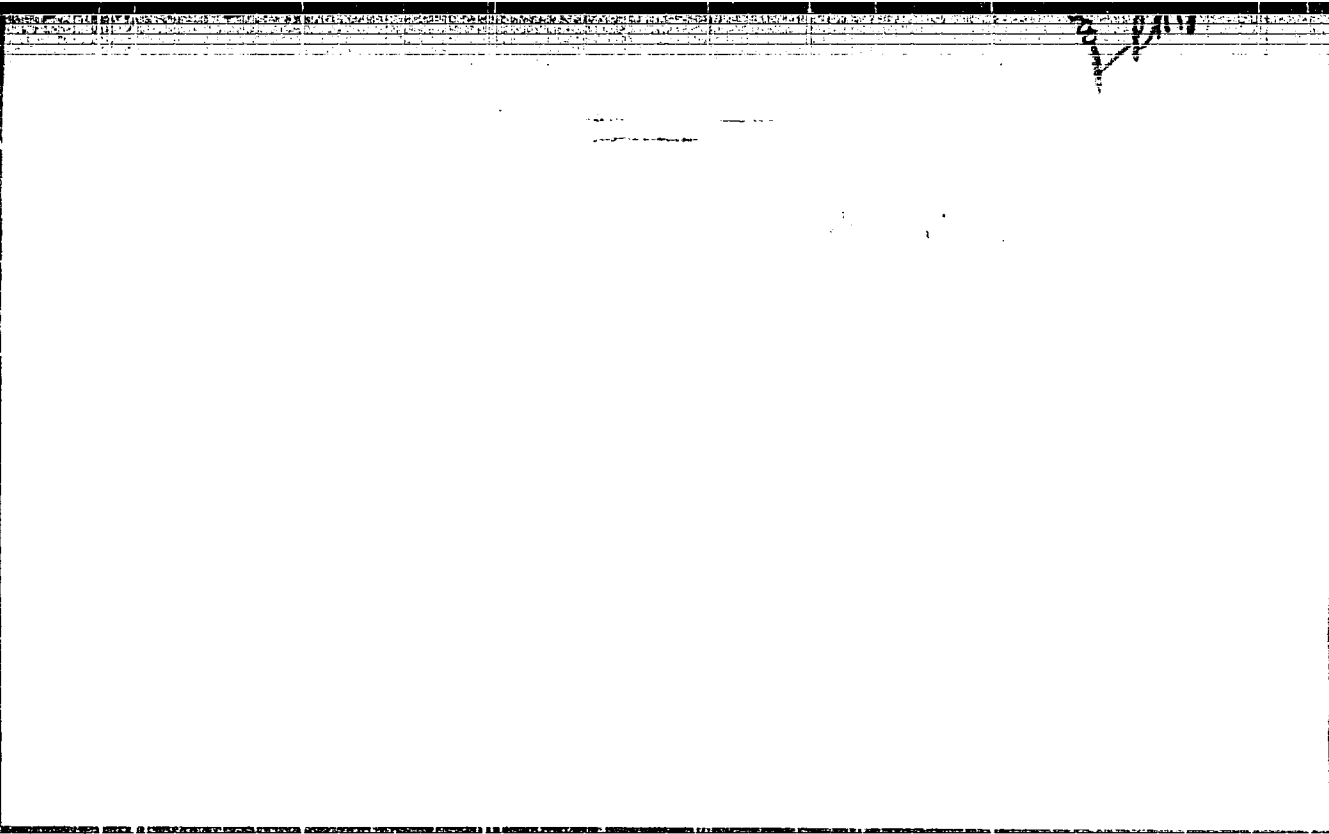(Electrochemistry--History)

DOLIN

BAKH, N.A., professor, doktor khimicheskikh nauk, redaktor; VERESHCHINSKIY,
I.V., redaktor; DOLIN, P.I., redaktor; MYASHIKOV, I.A., redaktor;
KISELEVA, A.A., tekhnicheskiy redaktor.

[Collection of papers on radiation chemistry] Sbornik rabot po
radiatsionnoi khimii. Moskva, 1955. 262 p.   (MLRA 8:11)

1. Akademiya nauk SSSR.
     (Radiation)

Influence of dissolved oxygen on the radiolysis of water by the action of X-rays. P. I. Dolin. _Sbornik Rabot Radiatsionnoi Khim._, Akad. Nauk. S.S.S.R. 1955, 7-23.— Doubly distd. water was exposed to x-radiation from a hydrogen tube having a cylindrical W anode, 30 mm. in diam., at 65 kv., and 200 ma., anode current, or to γ-radiation from a Co^{60} source. For dosages of $0-1.5 \times 10^{20}$ e.v./ml., H (formed by the reaction $2H_2O \rightarrow H_2 + H_2O_2$) varies linearly with dosage in O-satd. water, if the gaseous reaction products are removed. If the gaseous products are permitted to build up pressure, a steady state is reached beyond which further changes in the pressure of the H, P_{H_2}, and the concn. of H_2O_2, $C_{H_2O_2}$, are negligible. In O-satd. H_2O, this P_{H_2} is 226 mm. Hg, and $C_{H_2O_2} = 0.93 \times 10^{-3} N$. These pressures and concns. are reduced when pressure of the O in the system is reduced. The presence of H_2SO_4 at concns. of 0.1 to $1N$ increases radiolysis in conformity with the kinetic mechanism based on the ionic dissocn. of the free radicals HO_2 and OH. KOH increases radiolysis at concns. as low as $10^{-3}N$.

C. H. Fuchsman

DoLin, P.-I.

Kinetics of the reaction of hydrogen peroxide with hydrogen in aqueous solution under the influence of x-rays. P. I. Dolin. *Sbornik Rabot Radiatsionnei Khim., Akad. Nauk S.S.S.R.* 1955; 21-35.--Studies of the kinetics of radiation-induced decompn. of H_2O_2 by H_2 indicate the existence of 4 H_2O_2 concn. ranges characterized by different functional relations of decompn. rate with concn. The concn. ranges for regions I-IV, resp., are: 0.00005-0.0005, 0.0005-0.002, 0.002-0.01, 0.01-1.15 moles/l. The regions are characterized by the following resp. values for $-d[H_2O_2]/d(tJ)$ where J is the dosage power: region I, $-K_1 + (K_1/[H_2O_2])$, where K_1 is 0.33×10^{-4} mols./e.v., $K_2 = 1.3 \times 10^9$ (mols.)^2/e.v.; region II, 4.25 mols./100 e.v.; region III, $K_1 + K_2 [H_2O_2]$, where K_1 is 1.5 mols./e.v., $K_2 = 1.8 \times 10^5$ mols./(100 e.v.) (moles); region IV, $K_1 + K_2[H_2O_2]^{1/2}$ where K_1 is 17 mols./e.v. and K_2 is 86 mols./(100 e.v.) (moles)$^{1/2}$.

C. H. Fuchsman

$D_o LIN, P.I.$

USSR/Scientists - Chemistry

Card 1/1   Pub. 147 - 1/21

Authors   : Rebinder, P. A.; Dolin, P. I.; Kabanov, B. N.

Title   : The work of A. N. Frumkin and his school in the field of surface phenomena and kinetics of electron processes

Periodical : Zhur. fiz. khim. 29/10, 1746-1750, Oct 1955

Abstract   : Honoring the 60-th birthday of the famous Soviet physico-chemist, Academician Aleksandr Naumovich Frumkin, a group of his colleagues published a list of Frumkin's scientific research work on surface phenomena and the kinetics of electrode processes.

Institution :   .....

Submitted   :   .....

DUZHENKOV, V. I. and DOLIN, P. I.

"The Influence of X-rays on Dilute Water Solutions of Organic Substances" p.96

Trudy Transactions of the First Conference on Radioaction Chemistry, Moscow,
Izd-vo AN SSSR, 1958. 330pp.
Conference 25-30 March 1957, Moscow

BRUSENTSEVA, S. A., DOLIN, P. I.

"The Influence of Potassium Bromide and Potassium Chloride Concentration on the Yield of Molecular Products From Radiolysis of Water Soltuions" p.40

Trudy Transactions of the First Conference on Radioaction Chemistry, Moscow, Izd-vo AN SSSR, 1958. 330pp. Conference -25-30 March 1957, Moscow

BAKH, N.A., prof., otv. red.; MEDVEDEV, S.S., red.; VESELOVSKIY, V.I., prof., red.
DOLIN, P.I., doktor khim. nauk, red.; MILLER, M.B., kand. khim. nauk, red.
TSIKLIN, B.L., kand. khim. nauk, red.; TRIFONOV, D.N., red. izd-va.;
BUGAYENKO, L.T., red. izd-va.; MOSKVICHEVA, N.I., tekhn. red.

[All-Union Conference on Radiation Chemistry; transactions] Trudy I
Vsesoiuznogo soveshchaniia po radiatsionnoi khimii.[Moscow, 1957.]
Moskva, Izd-vo Akad. nauk SSSR, 1958. 330 p.   (MIRA 11:11)

1. Chlen-korrespondent AN SSSR (for Medvedev).
                    (Radiochemistry)

DOLIN, P.I

p ㄱ ·   PHASE I BOOK EXPLOITATION   790

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Deystviye ioniziruyushchikh izlucheniy na neorganicheskiye i organicheskiye
    sistemy (Effect of Ionizing Radiation on Inorganic and Organic Systems)
    Moscow. Izd-vo AN SSSR, 1958. 416 p. 7,000 copies printed.

Resp. Ed.: Pshezhetskiy, S. Ya.; Ed. of Publishing House: Bugayenko, L.T.;
    Tech. Ed.; Prusakova, T. A.

PURPOSE: This publication is for scientists working in the field of radiochemistry.

COVERAGE: This collection of articles represents contributions of Soviet scientists
    in the field of radiochemistry. The papers are concerned with the effect of
    ionizing radiation on organic and inorganic substances in solutions and in the
    solid phase. These papers were completed in the years 1951 - 1956 at the
    Institute of Physical Chemistry, AS USSR, the Institute of Physics and
    Chemistry imeni L. Ya. Karpov, the Moscow State University, and other scientific
    institutions. Most of these works are a continuation of those published in
    "Sbornik rabot po radiatsionnoy khimii" published in 1955. Ts. I. Zalkind
    and Yu. M. Malinskiy cooperated in the editing of this symposium.

Card 1/ 31

- Effect of Ionizing Radiation (Cont.)   790

TABLE OF CONTENTS:

PART 1.   REACTIONS IN AQUEOUS SOLUTIONS
AND RADIATION AND ELECTRO-CHEMICAL PROCESSES

Preface

Duzhenkov, V.I., Dolin, P.I.   Effect of X-ray Irradiation on Aqueous   7
Alkali Solutions Saturated With Oxygen
    The kinetics of accumulation of molecular products formed in the
radiolysis of water are studied in this paper. These products
are: hydrogen peroxide and hydrogen. The absorption of oxygen
in high-purity alkali solutions saturated with oxygen was also
taken into consideration. It was determined that the initial
yield of hydrogen depends on the concentration of the irradiated
KOH solution only for concentrations up to 0.6 - 0.7 N KOH. The
same relation was found for H_2O_2. The material balance of the
molecular products showed a strong deviation towards excessive
absorption of oxygen. This fact was explained as the formation of
higher peroxides, probably HO_2 or the complex $H_2O_2.HO_2$.

Card 2/ 31

Effect of Ionizing Radiation (Cont.)   790

There are 4 figures and 8 references, of which 6 are Soviet and 2 English.

Gvozdev, B.A., Shubin, V.N.   Effect of Accelerated Electrons on Potassium   12
Permanganate Solutions
     The reduction of aqueous $KMnO_4$ solutions by accelerated electrons in
the concentration range of 10^{-3} to $3 \cdot 10^{-1}$ M is discussed in this paper.
The yield of the reaction $Mn(VII) \longrightarrow Mn(IV)$ is determined from the
relation between the amount of reduced permanganate and the amount of
energy absorbed by the solution. The authors explain the effect of the
acidity of the solution (in the range pH = 0.4 to 12) on the rate of
reduction. The maximum yield was observed for pH = 2.05. It was
determined that the yield of reaction does not depend on the dosage rate
in the range from $\sim 10^{17}$ to $\sim 10^{20}$ eV/ml·sec for electron energies from
0.1 to 0.7 Mev. There are 8 figures, 3 tables, and 7 references, of which
4 are Soviet, 2 English, and 1 Polish.

Card 3/31

Effect of Ionizing Radiation (Cont.)   790

Sidorova, L.P., Zimin, A.V., Proskurin, M.A. Effect of Co^{60} γ - Radiation   22
on Aqueous Solutions of Salts of Tin
    The article deals with the effect of irradiation on $SnCl_2$ and
$SnCl_4$ solutions, and the role of the salts as acceptors of the
products of water radiolysis. Experimental data show that the
irradiation of $1 \cdot 10^{-2}$ M solutions of Sn^{2+} in 4N HCl and in
1N NaOH results in a hydrogen yield equal to the yield of
bivalent tin oxidation. The yield of hydrogen is 0.53 - 0.60
molecules/100 ev of absorbed energy. The hydrogen yield does
not change with the increase of dosage in an acid medium, and
decreases in an alkaline medium. The presence of bivalent tin
in alkaline solutions increases the hydrogen yield, while it
does not show an essential effect in an acid medium. The
oxidation of $Sn^{2+} \longrightarrow Sn^{4+}$ in acid and alkaline media is
apparently conditioned by the interaction of Sn^{2+} with H_2O_2
molecules. There are 3 tables, 1 figure, and 14 references,
of which 6 are Soviet, and 8 English.

Card 4/31

Effect of Ionizing Radiation (Cont.)   790

Chernova, A.I., Orekhov, V.D., Proskurin, M.A. Oxygen Compounds of   29
Iron Ions and Their Conversion During Radiolysis of Aqueous Solutions
    This is a study of iron peroxide compounds and their behavior under
    γ- and ultraviolet irradiation. Variable-valence ions are con-
sidered to be carriers of the oxidizing components in radiochemical
oxidation. The peroxide iron complex which forms during the irradia-
tion of a Mohr salt solution in 4N sulfuric acid decomposes in the
presence of Fe^{3+} to form bivalent ions. This process is intensified
with the increase of the Fe^{3+} concentration in the solution. It was
determined that the peroxide iron complex can be formed also in Mohr
salt solutions in 0.8N acid when an excess of Fe^{3+} is present. Addition
of $MnSO_4$, $TlNO_3$, NaCl, KBr, KI, $Ce(NO_3)_3$ and CuSO to the irradiated
solutions of the Mohr salt in 0.8 and 4N sulfuric acid leads to an
increased yield of Fe^{3+} ions. The effect is due to the presence of
bromide and iodide ions as well as Ce^{3+} and Cu^{2+}. There are 6 figures
and 11 references, of which 4 are Soviet, 4 English, and 3 German.

Card 5/31

Effect of Ionizing Radiation (Cont.)   790

Sharpatyy, V.A., Orekhov, V.D., Proskurin, M.A. Sensitization of the   37
Radiolytic Conversion of Sodium Nitrate in Aqueous Alkaline Solutions
    The subject of this paper is the effect of the temperature of the
solution on the yield of radiolytic conversion of nitrate in aqueous
alkaline solutions at temperatures from 20° to 90°. The same process
was studied with glycerin as acceptor of OH radicals. An increase
from 20° to 40° in 1M NaNO$_3$ / 1M KOH causes a sharp increase of the
nitrate yield: from ~ 3.0 to ~ 6.5 eqiv./100ev. The increase in
yield reaches its limit value at 80° and equals about 8 equiv./100ev.
The sensitizing effect of glycerin is apparent only when its concen-
tration is ~ 5.10^{-4} M and remains constant for concentrations up to
10^{-1}M. The presence of molecular oxygen (air) inhibits this effect.
There are 5 figures and 10 references, of which 6 are Soviet and 4
English.

Sharpatyy, V.A., Orekhov, V.D., Proskurin, M.A. Radiolytic Reduction of   43
Sodium Nitrate in Concentrated Aqueous Solutions
    This paper considers the radiolytic reduction of nitrate solutions in a
wide range of concentrations. Concentrations of NaNO$_3$ above 1M in the
presence of an inert gas (nitrogen) resulted in a yield of 8 to 9 equiv./
100ev NO$_2^-$. It was found that molecular oxygen inhibits the reduction

Card 6/31

Effect of Ionizing Radiation (Cont.)   790

process, which is evident in lower results as compared to the process
in an inert atmosphere. There are 2 figures and 6 references of which
3 are Soviet and 3 English.

Chernykh, V.Ya., Pshezhetskiy, S.Ya., Tyurikov, G.S. Kinetics of the
Decomposition of Hydrogen Peroxide Under the Action of γ - Radiation   48
    The authors studied the kinetics of H_2O_2 decomposition in a wide
    range of concentrations: 1.78 - 92.2 mol.%, in γ and ultraviolet
    radiation. The rate of the thermal reaction was also taken into
    consideration. The rate of the radiation reaction is proportional
    to the square root of γ -radiation intensity. The activation energy
    equals 6.5 ± 1.0 kcal/M. The activation energy of the photochemical
    reaction is 8 - 9 kcal/M. The efficiency of the γ -radiation reaction
    is 21 (at -4°) to 230 molecules of H_2O_2 (at 50°) per 100ev dosage rate
    of $1.84 \cdot 10^{18}$ ev/l. sec. It is a chain reaction. The kinetics of the
    radiation, photo, and thermal reactions can be clarified by assuming
    electrolytic dissociation of the HO_2 radical, the rate of which depends
    on the concentration of the solution. There are 20 figures, 4 tables, and

Card 7/31

Effect of Ionizing Radiation (Cont.)   790

    22 references of which 3 are Soviet, 16 English, and 3 German.

Zalkind, Ts.I., Veselovskiy, V.I.   Mechanism of Radiochemical Formation   66
of Stationary Potential Differences in Aqueous Solutions
    The stationary potential difference of $\sim$ 0.9 is formed in the
    system Pt/H_2SO_4 saturated with nitrogen/Au and irradiated with Co^{60}
    γ - radiation. It was shown that the formation of a positive
    potential at the Au electrode is connected with the radiolytic for-
    mation of the OH radical. The oxidation of the electrode during
    heating facilitates the formation of the positive potential at the
    Au electrode. The rate of reduction is determined by the rate of the
    electrode reaction, i.e., the electrochemical discharge stage. There
    are 6 figures, and 6 references of which 5 are Soviet and 1 English.

Zalkind, Ts.I., Veselovskiy, V.I.   Photoelectrochemical and Radiation   74
Electrochemical Processes in Aqueous Solutions of Uranium Salts
    Uranium salts were irradiated with radon and Co^{60}. It was shown
    that the hexavalent uranium salts show reduction of uranyl ions
    to pentavalent uranium ions. Due to the ease of oxidation -
    reduction transitions in the system $U(VI$ / $U(V)$, the increase of
    the uranyl ion concentration is followed by a decrease in the amount

Card 8/31

. Effect of Ionizing Radiation (Cont.)   790

of the formed H_2O_2 , uranium peroxide compounds, and in the oxidation
of U(IV) and oxalic acid. Irradiation of the system U(IV) / U(VI) and
U(III) / U(IV) results in a shift of equilibrium and the formation of
more oxidized forms. There are 14 figures, 7 tables, and 18 references
of which 8 are Soviet, 7 English, and 3 German.

Miller, I.B., Veselovskiy, V.I. Radiation Electrochemical Processes in   93
Aqueous Solutions of Uranyl Salts
    This is a study of the electrochemical nature of the redox components
in the radiolysis of uranyl salt solutions. Certain conditions were
established for the formation of the "hydrogen" and "oxygen" poten-
tials in this system. A stationary potential of the Pt electrode develops
during γ -irradiation due to the emergence of nonequilibrium concen-
trations of U(V). The stationary potential at the Au electrode in uranyl
sulfate solutions is $\sim$ 1.1v, while at the Pt electrode it shifts towards
negative values. There are 9 figures and 12 references, of which 6 are
Soviet and 6 English.

Card 9/31

Effect of Ionizing Radiation (Cont.)   790

Rozenfeld, I.L., Oshe, Ye.K. Mechanism of Activation of Electrodes   103
of Local Cells During Irradiation
    This paper discusses the effect of radiation on the properties of
semiconducting oxide films of the electrodes. It was determined
that only irradiation of the cathode intensifies the corrosion of
metals in electrolytes. This is due to the sharp increase in the
cathode efficiency resulting from "radiation conductivity" in the
protective film which is regarded as a semiconductor. The radia-
tion dependence of the corrosion current is expressed by:

$$I_k = I_k + A\sqrt{T} ,$$

where A is the constant for the given pair of electrodes. Candidate
of physical and mathematical sciences V.B. Sandomirskiy participated in
this work. There are 10 figures and 6 references of which 1 is Soviet,
3 English, 1 French and 1 Czech.

Card 10/31

Effect of Ionizing Radiation (Cont.)   790

Duzhenkov, V.I., Colin, P.I. Effect of X-rays on Diluted Aqueous
Solutions of Organic Substances   114
    The effect of organic additives on the yield of molecular products
from the radiolysis of water is studied in solutions of varying
acidity. It was determined that the initial yield of H_2 and
H_2O_2 increases, and their fixed concentrations are lowered. This
appears to be due to the fact that the radical products of radioly-
sis: H, OH, HO_2 react with the organic molecules more vigorously
than the molecules H_2 and H_2O_2. There are 3 figures, 2
tables, and 9 references, of which 3 are Soviet and 6 English.

Chernov, A.I., Orekhov, V.D., Proskurin, M.A. Sensitization and Inhibition
of Radiolytic Reduction of the Uranyl Ion in Aqueous Solutions   120
    The radiolytic reduction of uranyl ions was sensitized with glucose
and glycerin, and inhibited with methylene blue. The reduction of
UO_2^{2+} does not exceed 0.5 molecules/100 ev for low concentrations of
the uranyl ion ($5 \cdot 10^{-3}$ M) and of glucose or glycerin ($5 \cdot 10^{-3}$ M).
Concentration of 0.5 M glycerin leads to reduction of 5 molecules/
100 ev. The inhibiting effect of methylene blue is modified by the
ratio of concentrations of two substances reacting with H,

Card 11/31

Effect of Ionizing Radiation (Cont.)   790

the product of radiolysis: for $C_{UO_2}^{2+}$: C_{dye} = 1:1 the dosage of inhibition of the dye reaches
10^{18} ev/ml and decreases with the increase of this ratio. The participation of ionized and excited molecules of water in these processes is taken into consideration. Co^{60} γ - radiation was used for irradiation. There are 3 figures and 19 references of which 8 are Soviet and 11 English.

PART 2. REACTIONS OF INORGANIC SUBSTANCES

Buneeyev, N.A., Myasnikov, I.A., Pshezhetskiy, Formation of Ozone in
Liquid Oxygen Due to γ-Radiation   129
    The formation of ozone in LOX due to Co^{60} radiation was studied with respect to duration and intensity of irradiation. It was found that the yield of ozone is 13.6 molecules per 100 ev of the absorbed γ -radiation energy. There are 4 tables, 3 figures, and 3 Soviet references.

Card 12/31

Effect of Ionizing Radiation (Cont.)   790

Buneyev, N.A., Pshezhetskiy, S.Ya., Myasnikov, I.A. Formation of Ozone   133
in Gaseous Oxygen Due to Fast Electrons
      The effect of electrons on oxygen was studied at room temperature
and atmospheric pressure, under dynamic and static conditions. The
determined stationary concentration of ozone equals 0.1 - 0.2 per
cent for 200 Kev electrons and current of 50 - 100 μa. This is
4 to 8 times less than for LOX under analogous conditions. The
efficiency of the reaction is $\sim$ 1.5 molecules per 100 ev.
There are 9 figures, 5 tables, and 10 references, of which 3 are
Soviet, 4 English, 2 German and 1 Belgian.

Dmitriyev, M.T., Pshezhetskiy, S.Ya. Radiation Oxidation of Nitrogen.
Part 1. Kinetics of the Nitrogen Oxidation Reaction due to Electron   145
          Impact and the Effect of Ionization Processes
      This paper deals with kinetics of ionization and oxidation of
nitrogen due to the impact of 0 - 400ev electrons at pressures
up to 0.1 mm Hg. The reaction rate is defined by an equation of
the second order and the activation energy of the reaction equals
7.4 $\pm$ 1 kcal/M. The obtained data show that ionization of molecular
nitrogen is the primary elementary process leading to oxidation of
nitrogen, and that it is followed by direct interaction of the molec-
ular nitrogen ion with a molecule of oxygen and the interaction
Card 13/31

Effect of Ionizing Radiation (Cont.)   790

    of oxygen with products of the dissociation of the molecular nitrogen
ion. There are 18 figures, 12 tables, and 27 references of which 4
are Soviet, 19 English, 3 German, and 1 Belgium.

Dmitriyev, M.T., Fshezhetskiy, S.Ya. Radiation Oxidation of Nitrogen.   171
Part 2. Kinetics of the Oxidation of Nitrogen Due to Fast Electrons
    The oxidation of nitrogen due to fast electrons is studied in the
gaseous phase and at atmospheric pressure. The reaction kinetics
are defined by an equation of the second order. The reaction rate
is proportionate to the electron flux and to the ratio of gas
layer thickness to the maximum electron path in gas. At the tem-
perature of 40° the yield is 1.3 atoms of bound nitrogen for air,
and 2 atoms for a 1 : 1 gas mixture per 100 ev of absorbed energy.
The differences in the absolute values of reaction rate constants
are interpreted as the result of variations in the recombination
of ions. There are 10 figures, 2 tables, and 9 references of which
7 are Soviet and 2 English.

Card 14/31

Effect of Ionizing Radiation (Cont.)   790

Bol'shun, Ye.V., Pshezhetskiy, S.Yu., Ilyusnikov, I.A. Formation of   182
Hydrazine in Liquid Ammonia Due to Fast Electrons
    The formation of hydrazine due to fast electrons leads to a
    stationary hydrazine concentration conditioned by the balancing
    of the rates of direct and inverse reactions. The reaction
    efficiency is 1 - 1.2 molecules of hydrazine per 100 ev. There
    are 2 tables, 1 figure, and 6 references of which 3 are Soviet
    and 3 English.

Baberkin, A.S., Proskurnin, M.A., Orekhov, V.D. The Effect of   186
γ —Radiation on Solid Potassium Nitrate
    The γ-irradiation of potassium nitrate leads to evolution of
    gas and nitrite formation. The irradiated salt shows a sharp
    increase of gas evolution when heated to $\sim$ 129°. A decrease in
    the amount of initially formed nitrite is observed when the tem-
    perature rises above 122° (temperature of lattice destruction for
    KNO_3). The decrease in the nitrite yield is connected with the
    inverse reaction of nitrate formation which occurs due to the
    presence of atomic oxygen or free radicals in the irradiated salt.

Card 15/31

Effect of Ionizing Radiation (Cont.)   790

    There are 4 figures and 12 references of which 2 are Soviet,
9 English, and 1 German.

Baberkin, A.S., Proskurnin, M.A., Orekhov, V.D. Effect of γ-   193
Radiation on Solid Potassium Perchlorate and Chlorate
    Potassium perchlorate and chlorate powders were subjected to the
effect of Co^{60} γ-radiation in doses up to 10 megaroentgens per
1 g of the salt. It was established that the conversion of $KClO_4$
at temperatures up to 100° yielded ∼ 1.1 molecules of $KClO_3$
/100 ev and no other products. At temperatures up to 200° the
yield of the chlorate drops, the chloride appears and gas evolu-
tion occurs. At temperatures above 320° the yield of the chlo-
rate drops to 0.7, and the amount of the other products increases.
The irradiated $KClO_3$ yields 0.4 molecules of KCl and 1.2 molecules
of $KClO_2$ per 100 ev. At elevated temperatures the yield of the
chlorite drops to zero. It is assumed that the thermal decompo-
sition of irradiated salts has a radical character facilitating
the conversion of the intermediate products: ClO_4, ClO_3, O, and K.
Doses not exceeding 10 megaroentgens per 1 g cause coloration of
the salts. This is connected with the formation of coloration centers
in the crystal lattice which disappear at temperatures above 100°.

Card 16/31

Effect of Ionizing Radiation (Cont.)   790

   There are 7 figures and 10 references of which 3 are Soviet,
6 English, and 1 German.

                PART 3. REACTIONS OF ORGANIC SUBSTANCES

Krongauz, V.A., Bagdasar'yan, Kh.S. Energy Transfer in the Radiolysis of
Benzoyl Peroxide Solutions   205
     This paper considers the radiolysis of benzoyl peroxide solutions in
benzene, cyclohexane, and ethyl acetate. In the benzene solution of
peroxide, the transfer of excitation energy is from the solvent to
the solute. This effect was not detected in cyclohexane or ethyl acetate
solutions, in which the radiation decomposition of peroxide shows a chain
mechanism. The authors determined yields of radicals for the solvents and
the peroxide. Small additions of anthracene and phenanthrene to benzene
inhibit the decomposition of peroxide. There are 7 figures, 4 tables, and
15 references of which 2 are Soviet, 11 English, and 2 German.

Card 17/31   .

Effect of Ionizing Radiation (Cont.)   790

Mikhaylov, B.M., Tarasova, L.V., Bogdanov, V.S. Radiochemical Conversion
of Organic Substances. Part 1. Conversion of Gaseous Aliphatic Hydro-
carbons Due to Fast Electrons   218
    Methane, ethane, propane, and n-butane were irradiated with a 90 Kev
electron beam. Dehydrocondensation is the basic process of radiolysis.
Liquid hydrocarbons constitute 50 percent of the conversion products
of methane, and 70 - 90 percent of the conversion products of ethane,
propane, and n-butane. There are 3 tables, 2 figures, and 7 English
references.

Mikhaylov, B.M., Kumova, M.Ye., Bogdanov, V.S. Radiochemical Conversion
of Organic Substances. Part 2. Oxidation of Methane with Oxygen Due to
Fast Electrons   223
    A mixture of methane and oxygen (CH_4 : O_2 = 4 : 1 and 1 : 1)
was irradiated with fast electrons. CO, CO_2, H_2, and H_2O were found
in the reaction products. About 50 percent of the methane was con-
verted to the liquid phase. The rate of oxidation increases with
methane content (50 - 80%), and with increased pressure (190 - 760 mm
Hg). The mechanism of the reaction is regarded as radical.

Card 18/31

Effect of Ionizing Radiation (Cont.)   790

There are 9 figures, 4 tables, and 19 references of which 8 are Soviet, 10 English, and 1 German.

Vereshchinskiy, I.V., Bakh, N.A. Oxidation of Organic Compounds with Molecular Oxygen Due to Ionizing Radiation. Part 5. Effect of Radiation From a Nuclear Reactor on Benzene and Cyclohexane in Presence of Molecular Oxygen   234

Liquid benzene and cyclohexane were subjected to radiation from a nuclear reactor (recoil protons and γ-radiation) in the presence and absence of oxygen. Benzene oxidation products included phenol and aldehydes. Cyclohexanes gave hydroperoxides, disubstituted peroxides, cyclohexanone, and acids. Yields are similar to those obtained from low-density ionization. Gaseous products of benzene radiolysis in vacuum contain hydrogen and acetylene. The amount of molecular hydrogen increases in the presence of oxygen. The radiolysis of cyclohexane in vacuum yields hydrogen in amounts equal to number of molecules of cyclohexane which take part in polymerization. The presence of oxygen does not increase the hydrogen yield. There are 11 figures, 1 table, and 31 references of which 8 are Soviet, and 23 English.

Card 19/31

Effect of Ionizing Radiation (Cont.)   7:90

Sarayeva, V.V., Bakh, N.A., Rybin, L.V., Larin, V.A. Oxidation of
Organic Compounds with Molecular Oxygen Due to Ionization Radiation.   248
Part 6. Identification of Individual Products Obtained From the
Oxidation of N-Heptane and Isooctane
    This paper discusses the identification of individual carbonyl
compounds and acids, and the accumulation of alcohols formed during
the radiolytic oxidation of n-heptane and isooctane. It was shown
that most of the carbonyls are composed of compounds with the number
of carbons close to that of the original hydrocarbon molecule.
There are 15 figures, 7 tables, and 15 references of which 7 are
Soviet, 7 English and 1 French.

Sarayeva, V.V., Rudenko, B.I. Radiolytic Oxidation of Acetone   263
    Acetone was irradiated with Co^{60} γ-radiation in doses of
2×10^{13} and 1×10^{14} ev/cm^3. sec and with X-rays of 2×10^{16}
ev/cm^3 sec. in the presence of oxygen and at temperatures of
18 - 20°. Acids and aldehydes were the products of oxidation.
No peroxides were detected. The amount of aldehydes increased with
the increase of the dosage rate. The initial aldehyde yield is
    $\sim$ 80 molecules per 100 ev and it is independent of the dosage
rate. There are 2 figures and 6 references, 3 of which are Soviet
and 3 English.

Effect of Ionizing Radiation (Cont.)   790

Sarayeva, V.V., Kinetics of Interaction of Organic Peroxides With the Iodide Ion in Acetic Acid and the Determination of Peroxides Obtained From Radiolytic Oxidation of Hydrocarbons   266
    This is a study of the rate of interaction of sixteen organic peroxides with potassium iodide in glacial acetic acid. It was determined that the peroxides differ in rate constants but the rate constant for a given type of peroxides varies only slightly with changes in the structure of the hydrocarbon chain of the peroxide. Radiolytic oxidation yields hydroperoxides and peroxides from n-heptane, isooctane and toluene. Cyclohexane and tetralin yield only hydroperoxides. There are 6 figures, 2 tables, and 16 references of which 6 are Soviet, 8 English, and 2 German.

Zimin, A.V., Churmanteyev, S.V. The Effect of γ-Radiation on Benzene-
- Ammonia Mixture   273
    This paper considers the effect of dosage, temperature, and aggregate state on the yield of aniline, hydrogen, and nitrogen. The activity of the Co^{60} radiation source was $\sim$ 80 and $\sim$ 700 g-equiv., and the period of irradiation was 3 to 256 hours. The basic products of radiolysis in the absence of air were aniline, hydrogen, nitrogen, and

Card 21/31

Effect of Ionizing Radiation (Cont.)   790

polymerization products. Dosage and temperature increases (to +90°) have no significant effect on the yield of aniline. The benzene - ammonia mixture irradiated in the presence of oxygen shows a sixfold increase in aniline yield. The greater amount of radicals is due to decrease in the recombination of primary products of radiolysis, since atomic hydrogen is bound by molecular oxygen. There are 4 tables, 2 figures, and 8 references of which 3 are Soviet, 3 English, and 2 French.

Zimin, A.V., Verina, A.D. The Effect of γ-Radiation on the Mixture of   280
Benzene With Carbon Tetrachloride
The mixture was irradiated with Co^{60} γ-radiation (activity 80, 130, and 1450 g-equiv.). The authors studied the effect of the dosage and molar ratio of components on the yield of HCl and of the non-volatile residue. Variation of the dosage had no effect and the ratio variation of C_6H_6 : CCl_4 from 4 : 1 to 1 : 4 only slightly changed the results. The nonvolatile residue contains 70 percent of condensation products, $\sim$ 20 percent of high boiling fractions, and $\sim$ 10 percent of benzene. The most probable products of the high boiling fractions are monochlorobenzotrichloride isomers with a yield of $\sim$ 0.7 molecules per 100 ev. There are 3 tables and

Card 22/31

Effect of Ionizing Radiation (Cont.)   790

3 references of which 1 is Soviet and 2 German.

Vereshchinskiy, I.V., Karpushkin, L.T. Effect of γ-Radiation on the   285
Synthesis of Indophenol
    The synthesis of indophenol from an irradiated mixture of
a-naphthol and n-phenylene diamine was studied. The radiochemical
yield of indophenol is 4.7 molecules per 100 ev, and the yield of
the leuco form from the dye solution in vacuum is $\sim$ 1.8 molecules
per 100 ev. It was shown that the formation of the dye is a two-stage
process. The first stage is the formation of the leuco form. It does
not require the presence of molecular oxygen. The second state is the
conversion of the leuco form into the dye. This stage occurs only in
the presence of molecular oxygen. Irradiation considerably accelerates
the conversion of the leuco form. There are 9 figures and 12 references
of which 4 are Soviet, 6 German, 1 English, and 1 French.

PART 4. EFFECT OF RADIATION ON POLYMERS

Slovokhotova, N.A. Infrared Spectroscopic Study of Chemical Changes Occurring
in Polytetrafluoroethylene (Teflon) Due to Ionizing Radiation   295
    The infrared spectra of Teflon indicated that the conjugate

Card 23/31

Effect of Ionizing Radiation (Cont.)   790

C $=$ C double bonds form during irradiation with fast electrons and with Co^{60} γ-radiation. Irradiation in air leads to the interaction of teflon with water vapor with the formation of C $=$ O, OH, and CH groups. Irradiation converts crystalline teflon into amorphous teflon and possibly causes the formation of perfluorocyclobutene rings. There are 7 figures and 30 references, of which 3 are Soviet, 26 English, and 1 French.

Taubman, A.B., Yanov., L.P. Study of the Radiation Stability of High   307
Polymers. Part 1. Effect of Radiation on Diffusion Permeability
The effect of radiation on diffusive permeability of high-polymer films is conditioned by the physical state and structure of the polymers. Vitreous polyvinylmethacrylate with low permeability to gases shows a sharp increase in permeability after relatively small radiation doses. This is explained by the radiational instability of the densely packed macromolecules. The coefficients of permeability and diffusion through polyvinyl chloride and polyethylene were computed for hydrogen chloride. There are 3 figures, 2 tables and 9 references of which 3 are Soviet and 6 English.

Cad 24/31

Effect of Ionizing Radiation (Cont.)   790

Yanova, L.P., Taubman, A.B. Study of the Radiation Stability of High
Polymers. Part 2. Role of Gas Formation in the Destruction of Polymers   314
   The role of gas formation was studied in the destruction of poly-
   tetrafluorethylene, polymethylmethacrylate and polyethylene due to
   electron irradiation. The intensity of the process of formation of
   gaseous destruction products increases sharply in a narrow temperature
   range of polymer fusion or transition to visco-fluid state. It was
   shown that the destruction should be regarded as a reversible process:
   destruction ≠ recombination of free radicals. The equilibrium shifts
   to the left with transition of the polymer into the fluid state. Changes
   in the mechanical properties of polymers and finally their destruction,
   are determined by the ratio of decomposition rates to gas formation rates,
   and, therefore, depends on the permeability to gases of the sample subjected
   to fast-electron irradiation. Crack formation in the polymer due to irradi-
   ation is traced to gas formation and emanation. There are 8 figures, 3 tables,
   and 9 references of which 6 are Soviet, and 3 English.

Kargin, V.A., Taubman, A.B., Yanova, L.P., Belyayeva, Z.F. Effect of
Ionizing Radiation on the Properties of Vinyl Chloride and Vinylidene
Chloride Copolymers   325
   The effect of irradiation on gas permeability and mechanical

Card 25/31

Effect of Ionizing Radiation (Cont.)   790

    properties of the copolymers is connected with changes in the mixed
amorphous - crystalline states and microstructure of the copolymers.
The presence of crystallizing components increase the microdefects
which results in increased permeability to gases. A reverse process
can be observed for a specific range of small doses when the crysta-
lline component undergoes fusion and the material becomes amorphous.
Therefore, the curves for the permeability coefficient as a function
of dosage have a maximum and a minimum. There are 8 figures, 2
tables, and 7 references of which 6 are Soviet, and 1 French.

Nikitina, T.S., Kuz'minskiy, A.S., Karpov, V.L. Radiation Vulcanization
of Rubber   333
    This is a study of radiation vulcanization of pure rubbers:
natural rubber (NK), butadiene-styrene rubber (SKB-30) butadiene
rubber (SKB) and butadiene-nitryl rubber (SKN-26). The tensile
strength of the radiation vulcanizates of NK does not exceed
30kg/cm. Sulfur and certain sulfur compounds (tetramethylthiuram-
disulfide) lower the rate of the vulcanization. Compounds containing
heavy atoms (zinc oxide, kaolin, chalk) accelerate the vulcanization
only when X-rays are used. Gas and lamp blacks are very active fillers.

    1 26/31

Effect of Ionizing Radiation (Cont.)   790

   The effect of carbon blacks is modified by their degree of oxidation.
   There are 8 figures, 1 table, and 17 references of which 7 are
   Soviet, 8 English, 1 French, and 1 German.

Tsetlin, B.L., Sibirskaya, G.K. Effect of Ionizing Radiation on the   344
Thermomechanical Properties of Polyethylene
   Polyethylene undergoes vulcanization when irradiated with electrons
   and X-rays. At a temperature corresponding to the melting point of
   the initial polymer, the irradiated substance converts to a highly
   elastic state the modulus of which is proportional to the dosage.
   In the range of $10^{16} - 10^{19}$ ev/cm sec vulcanization effectiveness
   follows the principle of equivalent effect of equal doses. The
   thermal stability of polyethylene increases with increased dosage.
   The mechanism of radiation vulcanization is related to the recom-
   bination of the $R_1 \cdot \overset{\bullet}{C}H \cdot R_2$ radicals which result from primary

   rupture of the C - H bonds. There are 4 figures, 1 table, and
   22 references of which 14 are Soviet, 7 English, and 1 French.

Card 27/31